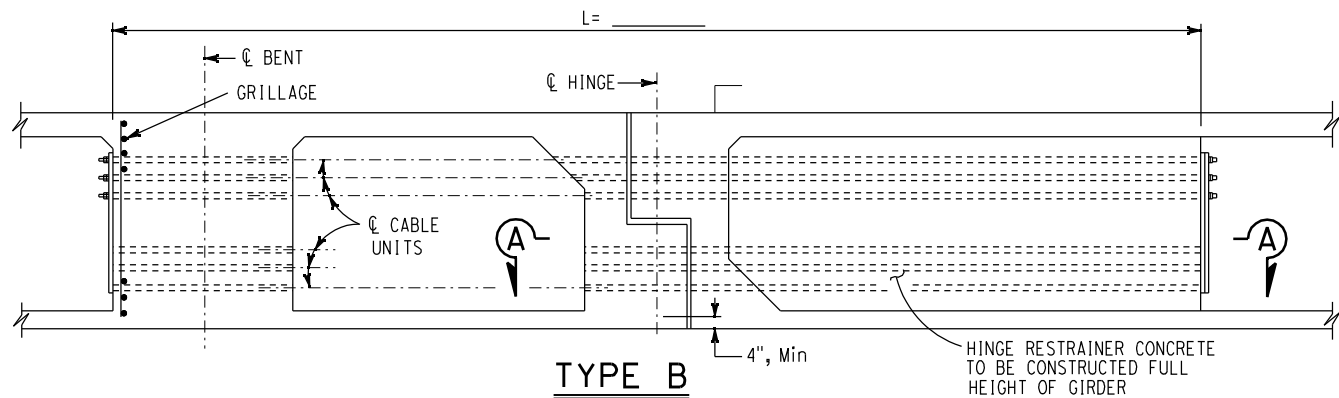
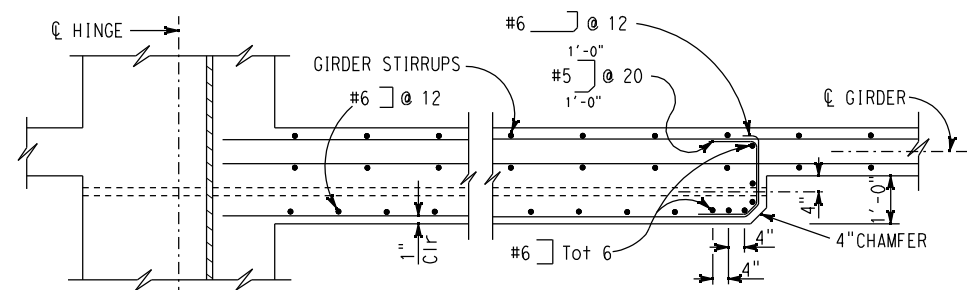


**TYPE A**

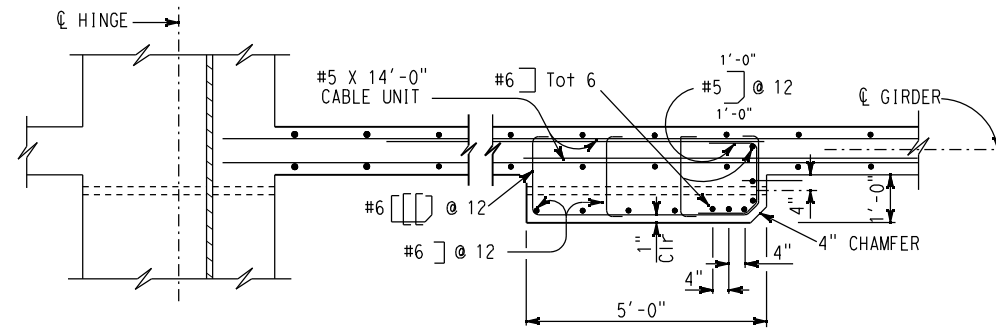


**TYPE B**

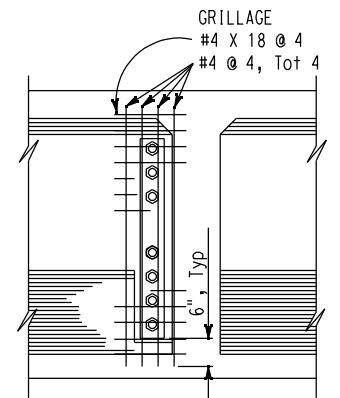
**LONGITUDINAL HINGE RESTRAINER**



**SECTION A-A**

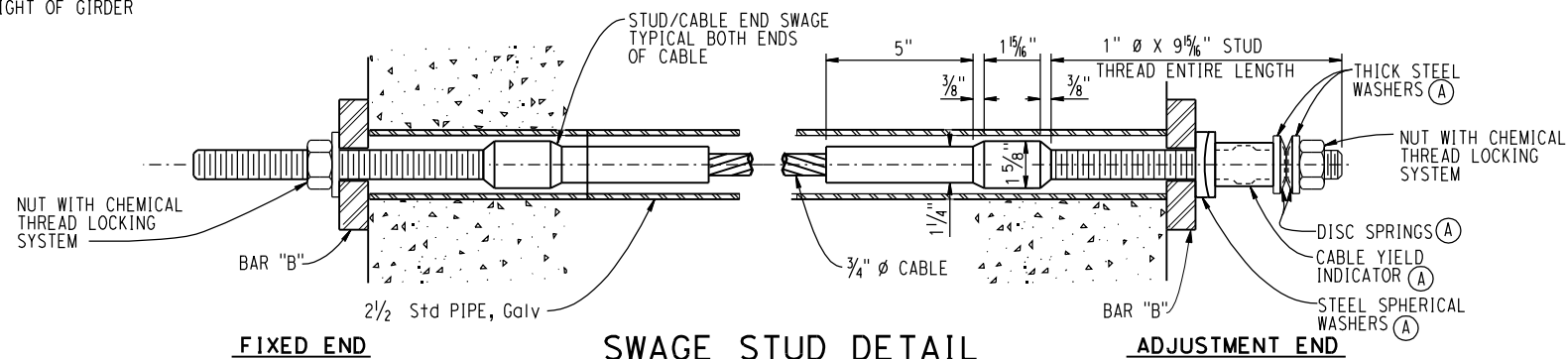


**SECTION A-A (ALTERNATIVE)**



**SECTION C-C**

NOTE: SLOPE TO MATCH SLOPING EXTERIOR GIRDERS

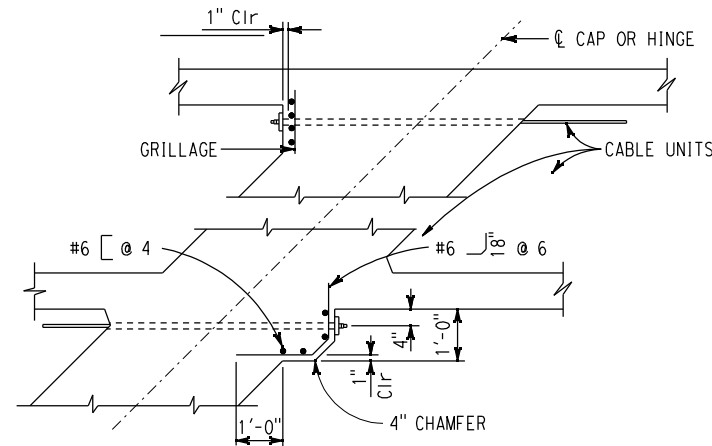


**FIXED END**

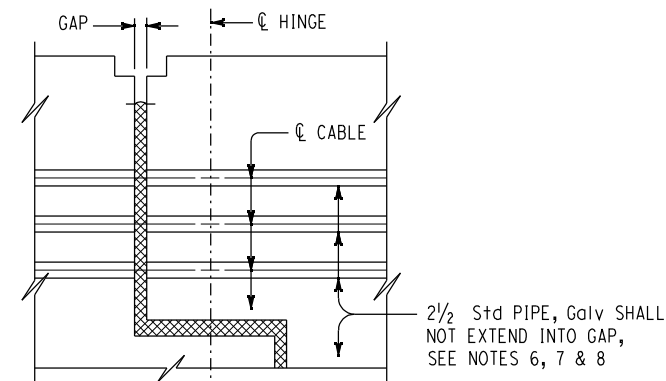
**SWAGE STUD DETAIL**

**ADJUSTMENT END**

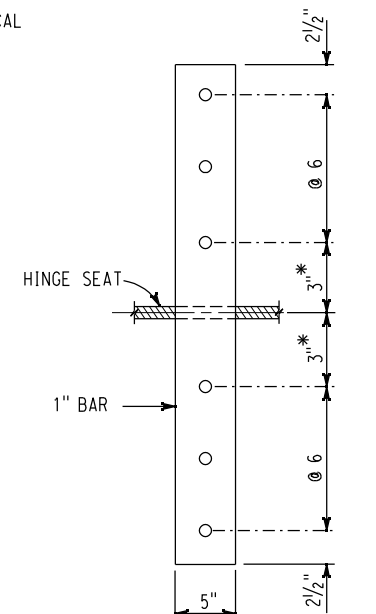
(A) FOR DIMENSIONS AND INSTALLATION PROCEDURE, SEE "CABLE RESTRAINER ADJUSTMENT HARDWARE" SHEET XS7-090



**END ANCHORAGE DETAILS AT HINGE OR CAP PART PLAN**



**HINGE DETAIL**



**DETAIL - BAR B**

\* DIMENSION MAY BE ADJUSTED TO CLEAR REINFORCEMENT

NO SCALE

**NOTES:**

1. Restrainer units to be on tangent alignment
2. Anchor nuts shall not be set until 30 days following completion of prestressing for CIP prestressed bridges
3. See other sheets for location and number of longitudinal and vertical hinge restrainers, and table of joint openings
4. Contractor may install restrainers in horizontal arrangement with approval of the Engineer. The location shall be in the middle 1/2 depth of the structure
5. An alternative is to place restrainers in two horizontal layers, equally located above and below the mid structure depth. The number of restrainers in each layer shall not differ by more than one
6. The ends of pipe shall be covered or capped to prevent concrete and debris from entering the pipe until hinge concrete is placed
7. Care should be taken to align the pipes on each side of the hinge
8. All ends of pipes must be flush with or slightly recessed from the concrete. The inside edges of the pipes must be smooth to prevent fraying of cables

STANDARD DRAWING	
FILE NO. <b>xs7-050</b>	APPROVAL DATE <u>July 2011</u>

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11))

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

**DIVISION OF ENGINEERING SERVICES**

BRIDGE NO.	X
POST MILE	X

**CABLE RESTRAINER TYPE 2**

UNIT: X  
PROJECT NUMBER & PHASE: X

CONTRACT NO.: X

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
	X	X

DATE PLOTTED => \$DATE USERNAME => \$USER TIME PLOTTED => \$TIME